

WHAT IS CLAIMED IS:

1. An isolated peptide selected from the group consisting of:

(X1)_nEVEKIKTTVKESATEEKLTPVX2L(X2)_m (SEQ ID NO: 1),

(Y1)_nEVAALQVDRKVADEEKQSYDAV(Y2)_m (SEQ ID NO: 2),

5 wherein

n and m independently represent 0 or 1;

X1, X2 and X3 are independently defined as follows

X1 is GVKETPQQKYQRLHEVQELTT (SEQ ID NO: 3), or

VKETPQQKYQRLHEVQELTT (SEQ ID NO: 4), or

10 KETPQQKYQRLHEVQELTT (SEQ ID NO: 5), or

ETPQQKYQRLHEVQELTT (SEQ ID NO: 6), or

TPQQKYQRLHEVQELTT (SEQ ID NO: 7), or

PQQKYQRLHEVQELTT (SEQ ID NO: 8), or

QQKYQRLHEVQELTT (SEQ ID NO: 9), or

15 QKYQRLHEVQELTT (SEQ ID NO: 10), or

KYQRLHEVQELTT (SEQ ID NO: 11), or

YQRLHEVQELTT (SEQ ID NO: 12), or

QRLHEVQELTT (SEQ ID NO: 13), or

RLLHEVQELTT (SEQ ID NO: 14), or

20 LLHEVQELTT (SEQ ID NO: 15), or

LHEVQELTT (SEQ ID NO: 16), or

HEVQELTT (SEQ ID NO: 17), or

EVQELTT (SEQ ID NO: 18), or

VQELTT (SEQ ID NO: 19), or

25 QELTT (SEQ ID NO: 20), or

ELTT (SEQ ID NO: 21), or

LTT, or

TT, or

T;

30 X2 is V or L, and

X3 is AKQLAAL (SEQ ID NO: 22), or

AKQLAA (SEQ ID NO: 23), or
AKQLA (SEQ ID NO: 24), or
AKQL (SEQ ID NO: 25), or
AKQ, or
AK, or
A;

and

Y1 and Y2 are independently defined as follows

Y1 is GEKETPVQKCQRLQIEMNELLN (SEQ ID NO: 26), or
EKETPVQKCQRLQIEMNELLN (SEQ ID NO: 27), or
KETPVQKCQRLQIEMNELLN (SEQ ID NO: 28), or
ETPVQKCQRLQIEMNELLN (SEQ ID NO: 29), or
TPVQKCQRLQIEMNELLN (SEQ ID NO: 30), or
PVQKCQRLQIEMNELLN (SEQ ID NO: 31), or
VQKCQRLQIEMNELLN (SEQ ID NO: 32), or
QKCQRLQIEMNELLN (SEQ ID NO: 33), or
KCQRLQIEMNELLN (SEQ ID NO: 34), or
CQRLQIEMNELLN (SEQ ID NO: 35), or
QRLQIEMNELLN (SEQ ID NO: 36), or
RLQIEMNELLN (SEQ ID NO: 37), or
LQIEMNELLN (SEQ ID NO: 38), or
QIEMNELLN (SEQ ID NO: 39), or
IEMNELLN (SEQ ID NO: 40), or
EMNELLN (SEQ ID NO: 41), or
MNELLN (SEQ ID NO: 42), or
NELLN (SEQ ID NO: 43), or
ELLN (SEQ ID NO: 44), or
LLN, or
LN, or
N; and

Y2 is VATVISTAR (SEQ ID NO: 45), or

VATVISTA (SEQ ID NO: 46), or
 VATVIST (SEQ ID NO: 47), or
 VATVIS (SEQ ID NO: 48), or
 VATVI (SEQ ID NO: 49), or
 VATV (SEQ ID NO: 50), or
 VAT, or
 VA, or
 V, and

derivatives thereof having at least about 90% identity with SEQ ID NO: 1 or SEQ ID
 NO: 2.

2. The peptide of claim 1 which is
 GVKETPQQKYQRLLEHVQELTTEVEKIKTTVKESATEEKLTPVX2LAKQLAAL
 (SEQ ID NO: 51),
 wherein X2 is as defined in claim 1.

3. The peptide of claim 1 which is
 GEKETPVQKCQRLQIEMNELLNEVAALQVDRKVADEEKQSYDAVVATVISTAR
 (SEQ ID NO: 52).

4. A peptide having at least 90% sequence identity with the peptide of SEQ
 ID NO: 51.

5. A peptide having at least 90% sequence identity with the peptide of SEQ
 ID NO: 52.

6. The peptide of claim 4 having only conservative amino acid substitutions
 compared with SEQ ID NO: 51.

7. The peptide of claim 5 having only conservative amino acid substitutions
 compared with SEQ ID NO: 52.

8. A peptide encoded by nucleic acid hybridizing under stringent conditions to the coding sequence of SEQ ID NO: 52 as set forth in Figure 3 (SEQ ID NO: 55).

5 9. The peptide of claim 1 capable of modulating cellular proliferation.

10. The peptide of claim 1 capable of inhibiting cellular proliferation.

10 11. The peptide of claim 10 capable of selective inhibition of cancerous cells.

12. Nucleic acid encoding a peptide of claim 1.

15 12. A vector comprising and capable of expressing the nucleic acid of claim 12.

14. A recombinant host cell transformed with the nucleic acid of claim 12.

20 15. A composition comprising a peptide of claim 1 in admixture with a pharmaceutically acceptable carrier.

16. A composition comprising a nucleic acid of claim 12 in admixture with a carrier.

25 17. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 1 or a nucleic acid encoding said peptide.

30 18. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 4 or a nucleic acid encoding said peptide.

19. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 5 or a nucleic acid encoding said peptide.

5

20. A method for inhibiting cellular proliferation comprising delivering to a target cell an effective amount of an isolated peptide of claim 8 or a nucleic acid encoding said peptide.

10

21. The method of claim 17 wherein said target cell is a tumor cell.

22. The method of claim 21 wherein said tumor cell is a cancer cell.

15

23. A method for identifying a compound capable of inhibiting cellular proliferation comprising incubating a battery of candidate compounds with a mixture of a peptide of claim 1 and a native ZW10 protein for a time and under conditions sufficient for interaction between said candidate compounds and said peptide or ZW10, monitoring said interaction, and selecting a compound that interacts with said peptide or ZW10.

20

24. The method of claim 23 wherein said interaction is monitored by the yeast two-hybrid system.

25. The method of claim 23 wherein said interaction is binding to ZW10.

25

26. The method of claim 23 wherein said interaction is binding to said polypeptide.

27. A molecule identified by the method of claim 23.

30